

CLAIMS:

1. A method of forming a film comprising:
providing a thin polymer ribbon,
5 positioning at least one conductor adjacent to and substantially parallel with said ribbon,
folding said ribbon substantially in half parallel with said ribbon such that said at least one conductor is adjacent to, and encapsulated in said fold, and
thermally welding said folded ribbon to permanently encapsulate said at least
10 one conductor.
2. A method of forming a film as claimed in claim 1, wherein said at least one conductor is a pair of conductors, and said conductors are positioned parallel and closely spaced and said ribbon is folded adjacent one said conductor; such that a first
15 of said pair of conductors is adjacent to and encapsulated in said fold, and
a second of said pair of conductors is spaced from said first conductor and encapsulated in said fold.
3. A method of forming a film as claimed in claim 2, wherein said thermal
20 welding comprises passing said folded ribbon between a pair of heated rollers,
said rollers applying pressure to squeeze said folded ribbon together.
4. A method of forming a film as claimed in claim 3, wherein at least one of said rollers includes a groove for at least partially receiving each of said at least one
25 conductor and the layer of ribbon over it.
5. A method of forming a film as claimed in any one of claims 1 to 4, wherein said method further comprises forming a crease substantially midway along said folded ribbon, said crease being substantially parallel with said ribbon;
30 forming said crease while said ribbon is softened following said thermal welding occurring.

6. A method of forming a film as claimed in claim 5, wherein said crease is formed by passing said folded film through at least one set of crease rollers, said rollers in a creasing region shaped according to the profile of said crease.

5 7. A method of forming a film comprising:
providing a thin polymer ribbon,
heating said ribbon to soften said ribbon,
forming a crease approximately midway across said ribbon, said crease being substantially parallel with said ribbon, and
10 winding said creased ribbon onto a spool.

8. A method of forming a film as claimed in claim 7, wherein said crease is formed by passing said film through at least one set of crease rollers, said crease rollers in a creasing region shaped according to the profile of said
15 crease.

9. A method of continuously forming a conduit comprising:
providing a thin polymer ribbon,
positioning at least one conductor adjacent to and substantially parallel with
20 said ribbon,
folding said ribbon substantially in half parallel with said ribbon such that said at least one conductor is adjacent to, and encapsulated in said fold, and
thermally welding said folded ribbon to permanently encapsulate said at least one conductor,
25 supplying said folded ribbon having "leading" and trailing" lateral edges, spirally around a former rotating and advancing said conduit, with the leading edge of each turn of ribbon overlapping the trailing edge of a previous turn of ribbon on the former and the trailing edge of each turn underlapping the leading edge of a succeeding turn, and
30 applying a bead of molten plastic material to said lapping edges of adjacent turns of ribbon, such that said bead welds said adjacent edges.

10. A method of continuously forming conduit as claimed in claim 9, wherein said at least one conductor is a pair of conductors, and said conductors are positioned parallel and closely spaced and said ribbon is folded adjacent one said conductor; such that a first of said pair of conductors is adjacent to and encapsulated in said fold, and
5 a second of said pair of conductors is spaced from said first conductor and encapsulated in said fold.
11. A method of continuously forming conduit as claimed in claim 9 or claim 10, wherein said thermal welding includes passing said folded ribbon between a pair of
10 heated rollers,
said rollers applying pressure to squeeze said folded ribbon together.
12. A method of continuously forming conduit as claimed in claim 11, wherein at least one of said rollers includes a groove for at least partially receiving each of said at
15 least one conductor and the layer of ribbon over it.
13. A method of continuously forming conduit as claimed in any one of claims 9 to 12, wherein said method further comprises forming a crease substantially midway along said folded ribbon, said crease being substantially parallel with said ribbon;
20 forming said crease while said ribbon is softened following said thermal welding occurring.
14. A method of continuously forming conduit as claimed in claim 13, wherein said crease is formed by passing said folded film through at least one set of crease rollers,
25 said crease rollers in a creasing region shaped according to the profile of said crease.
15. A method of continuously forming conduit comprising:
providing a thin polymer ribbon,
30 heating said ribbon to soften said ribbon,
forming a crease approximately midway across said ribbon, said crease being substantially parallel with said ribbon,

supplying said folded ribbon having "leading" and trailing" lateral edges, spirally around a former rotating and advancing said conduit, with the leading edge of each turn of ribbon overlapping the trailing edge of a previous turn of ribbon on the former and the trailing edge of each turn underlapping the leading edge of a succeeding turn, and

applying a bead of molten plastic material to said lapping edges of adjacent turns of ribbon, such that said bead welds said adjacent edges.

16. A method of continuously forming conduit as claimed in claim 15, wherein said crease is formed by passing said folded film through at least one set of crease rollers, said crease rollers in a creasing region shaped according to the profile of said crease.

17. An apparatus for forming a film comprising:
a means for supplying a thin polymer ribbon,
at least one spool for supplying at least one thin conductor, at a first position adjacent to and substantially parallel with said ribbon,
a folding means to fold said ribbon substantially in half such that said at least one conductor is adjacent to and encapsulated by said folded ribbon,
a thermal welding means adapted to weld said folded film and permanently encapsulate said at least one conductor.

18. An apparatus for forming film as claimed in claim 17, wherein said thermal welding means includes a pair of heated rollers, said rollers applying pressure to squeeze said folded ribbon together.

19. An apparatus for forming a film as claimed in claim 18, wherein at least one of said rollers includes a groove for at least partially receiving each of said at least one conductor and the layer of ribbon over it.

20. An apparatus for forming a film comprising:
a means for supplying a thin polymer ribbon,

a heating means for heating said thin polymer ribbon,
a creasing means for forming a crease in said ribbon after being heated by said heating means, approximately midway across said ribbon, said crease being substantially parallel with said ribbon, and

5 a spool for receiving said creased ribbon.

21. An apparatus for forming a film as claimed in any one of claims 17 to 19, wherein said apparatus further comprises:

10 a creasing means for forming a crease in said ribbon approximately midway across said ribbon, said crease being substantially parallel with said ribbon.

22. An apparatus for continuously forming conduit comprising:

15 a means for supplying a thin polymer ribbon,
at least one spool for supplying at least one thin conductor, at a first position adjacent to and substantially parallel with said ribbon,

a folding means to fold said ribbon substantially in half such that said at least one conductor is adjacent to and encapsulated by said folded ribbon,

a thermal welding means adapted to weld said folded film and permanently encapsulate said at least one conductor,

20 a means for delivering said folded ribbon having "leading" and trailing" lateral edges, spirally around a former rotating and advancing said conduit, with the leading edge of each turn of ribbon overlapping the trailing edge of a previous turn of ribbon on the former and the trailing edge of each turn underlapping the leading edge of a succeeding turn, and

25 a means for applying a bead of molten plastic material to said lapping edges of adjacent turns of ribbon, such that said bead welds said adjacent edges.

23. An apparatus for continuously forming conduit as claimed in claim 22, wherein said apparatus further includes, a creasing means for forming a crease in said folded ribbon approximately midway across said ribbon,

30 said crease being substantially parallel with said ribbon, and

said creasing means positioned to crease said ribbon before being delivered around said former.

24. An apparatus for continuously forming conduit comprising:

a means for supplying a thin polymer ribbon,

a heating means for heating said polymer ribbon,

5 a creasing means for forming a crease in said ribbon after being heated by said heating means, approximately midway across said ribbon, said crease being substantially parallel with said ribbon,

a means for delivering said folded ribbon having "leading" and trailing" lateral edges, spirally around a former rotating and advancing said conduit, with the leading
10 edge of each turn of ribbon overlapping the trailing edge of a previous turn of ribbon on the former and the trailing edge of each turn underlapping the leading edge of a succeeding turn, and

a means for applying a bead of molten plastic material to said lapping edges of adjacent turns of ribbon, such that said bead welds said adjacent edges.

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25. A conduit formed by a method according to any one of claims 9 to 16.

26. A film formed by a method according to any one of claims 1 to 8.

20 27. A film substantially as herein described with reference to, and as illustrated by any one or more of Figures 3 to 7 and 11.

28. A method of continuously forming a conduit substantially as herein described with reference to, and as illustrated by any one or more of Figures 7 to 10, and 12, 13
25 and 16.

29. A method of forming film substantially as herein described with reference to, and as illustrated by any one or more of Figures 2 to 6, 11, 14 and 15.